

### Abstract f the Disclosure

A method and apparatus for providing bidirectional signaling in a bus topology is provided. The bus topology allows more than two electrical circuits or devices to be coupled together along one or more common electrical conductors. For each device on the bus, a transmit buffer is preferably provided for every other device on the bus with which it will communicate. One or more logic circuits, for example, a scheduler, is provided to coordinate exchange transactions between pairs of devices. Time delays are preferably provided between exchange transactions of different device pairs so as to prevent interference. Coherency checking is preferably implemented to avoid discrepancies introduced by information being held in a buffer pending an exchange transaction. Devices coupled to a common bus preferably maintain a transmit buffer for each other device on the bus with which they will be communicating. When one of the transmit buffers for communicating between a pair of devices contains an amount of data, that pair of devices is granted an exchange slot on the bus that provides a period of time during which the pair of devices may conduct their exchange transaction and communicate with each other over the bus. During the exchange slot, the pair of devices transfer information from their transmit buffers across the bus to receive buffers of the opposite device. Different exchange slots are used for different pairs of devices.

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